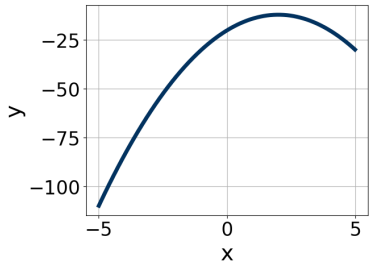
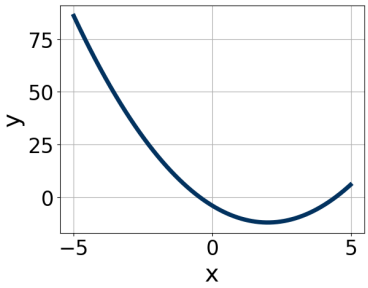
1. Graph the equation below.

$$f(x) = -(x+2)^2 - 12$$

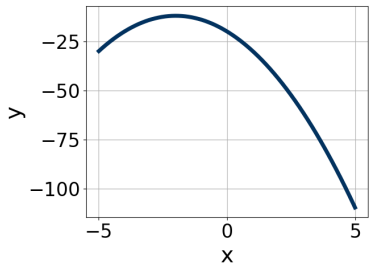
A.



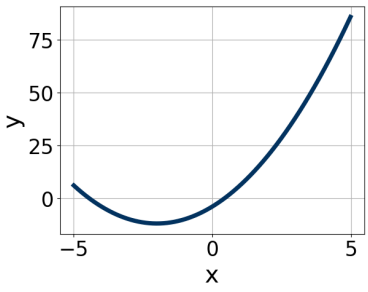
C.



B.



D.



E. None of the above.

---

2. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax+b)(cx+d); b \leq d$.

$$36x^2 - 60x + 25$$

A. $a \in [17.82, 18.15]$, $b \in [-11, -2]$, $c \in [1.94, 3.43]$, and $d \in [-5, -3]$

B. $a \in [-0.25, 1.19]$, $b \in [-31, -21]$, $c \in [0.36, 1.88]$, and $d \in [-32, -29]$

C. $a \in [1.53, 3.89]$, $b \in [-11, -2]$, $c \in [17.71, 18.48]$, and $d \in [-5, -3]$

D. $a \in [5.77, 6.01]$, $b \in [-11, -2]$, $c \in [5.38, 6.44]$, and $d \in [-5, -3]$

E. None of the above.

---

3. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax + b)(cx + d); b \leq d$.

$$54x^2 - 75x + 25$$

A. $a \in [17.5, 20.9]$, $b \in [-5, -2]$, $c \in [1.7, 3.1]$, and $d \in [-5, -4]$

B. $a \in [8, 9.6]$, $b \in [-5, -2]$, $c \in [5.7, 7.9]$, and $d \in [-5, -4]$

C. $a \in [2.4, 4.5]$, $b \in [-5, -2]$, $c \in [17.2, 21.4]$, and $d \in [-5, -4]$

D. $a \in [0.3, 2]$, $b \in [-45, -39]$, $c \in [-0.1, 2.7]$, and $d \in [-32, -29]$

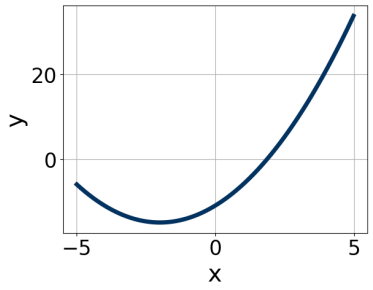
E. None of the above.

---

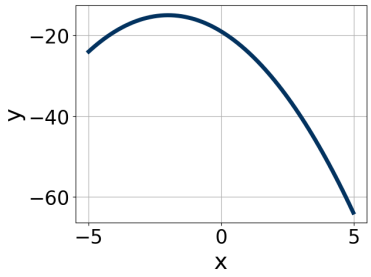
4. Graph the equation below.

$$f(x) = -(x - 2)^2 - 15$$

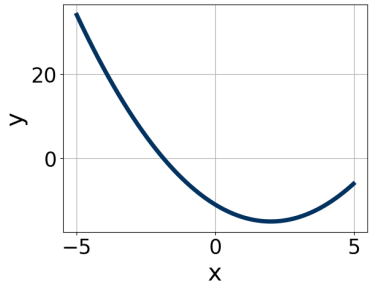
A.



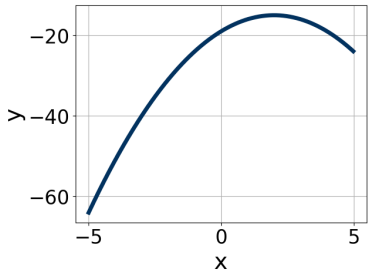
C.



B.



D.



E. None of the above.

---

5. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$-12x^2 - 10x + 5 = 0$$

A. $x_1 \in [-0.5, 0.7]$ and $x_2 \in [0.5, 2]$

B. $x_1 \in [-6.2, -2.8]$ and $x_2 \in [12.2, 14.3]$

C. $x_1 \in [-1.5, -0.4]$ and $x_2 \in [-0.3, 1]$

D. $x_1 \in [-20.1, -18]$ and $x_2 \in [16.5, 18.7]$

E. There are no Real solutions.

---

6. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$20x^2 - 12x - 4 = 0$$

A. $x_1 \in [-21.27, -20.75]$ and $x_2 \in [21.6, 22.6]$

B. $x_1 \in [-4.87, -4.48]$ and $x_2 \in [15, 18.5]$

C. $x_1 \in [-1.53, -0.44]$ and $x_2 \in [0.1, 0.4]$

D. $x_1 \in [-0.54, 0.22]$ and $x_2 \in [0.6, 2.1]$

E. There are no Real solutions.

---

7. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$20x^2 - 69x + 54 = 0$$

A. $x_1 \in [0.71, 0.75]$ and $x_2 \in [3.14, 4.04]$

B. $x_1 \in [0.58, 0.61]$ and $x_2 \in [3.76, 4.87]$

C. $x_1 \in [23.99, 24.03]$ and $x_2 \in [44.08, 45.72]$

D. $x_1 \in [1.16, 1.22]$ and $x_2 \in [1.85, 2.93]$

E. $x_1 \in [0.45, 0.46]$ and $x_2 \in [5.51, 6.52]$

---

8. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$15x^2 + 38x + 24 = 0$$

A. $x_1 \in [-2.78, -2.65]$ and $x_2 \in [-0.62, -0.51]$

B. $x_1 \in [-2.6, -1.67]$ and $x_2 \in [-0.74, -0.61]$

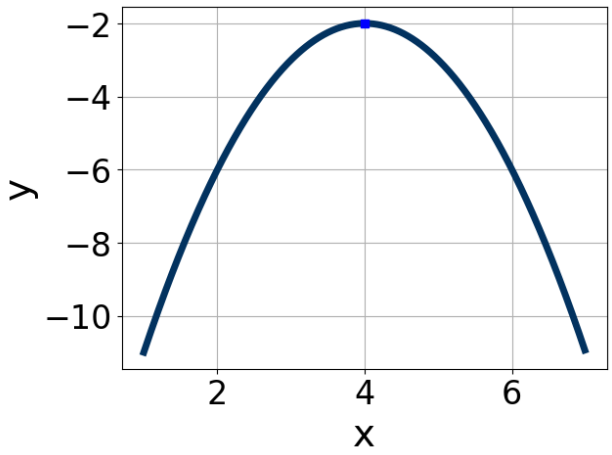
C. $x_1 \in [-6.56, -5.86]$ and $x_2 \in [-0.27, -0.26]$

D. $x_1 \in [-20.18, -19.34]$ and $x_2 \in [-18.08, -17.99]$

E. $x_1 \in [-1.67, -0.95]$ and $x_2 \in [-1.29, -1.18]$

---

9. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that a, b, and c belong to.



A. $a \in [-1.6, -0.8]$, $b \in [7, 13]$, and $c \in [-19, -17]$

B. $a \in [-1.6, -0.8]$, $b \in [-8, -5]$, and $c \in [-15, -11]$

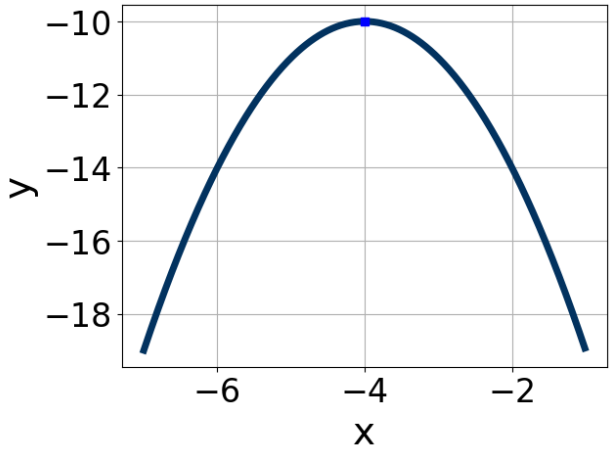
C. $a \in [-1.6, -0.8]$, $b \in [-8, -5]$, and $c \in [-19, -17]$

D. $a \in [-0.2, 1.6]$, $b \in [7, 13]$, and $c \in [13, 18]$

E. $a \in [-0.2, 1.6]$, $b \in [-8, -5]$, and $c \in [13, 18]$

---

10. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that a, b, and c belong to.



A. $a \in [1, 3]$, $b \in [-10, -7]$, and $c \in [5, 9]$

B. $a \in [1, 3]$, $b \in [6, 12]$, and $c \in [5, 9]$

C. $a \in [-3, 0]$, $b \in [6, 12]$, and $c \in [-7, -1]$

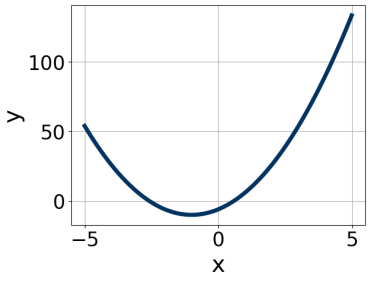
D. $a \in [-3, 0]$, $b \in [6, 12]$, and $c \in [-26, -23]$

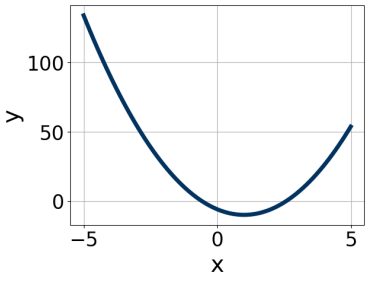
E. $a \in [-3, 0]$, $b \in [-10, -7]$, and $c \in [-26, -23]$

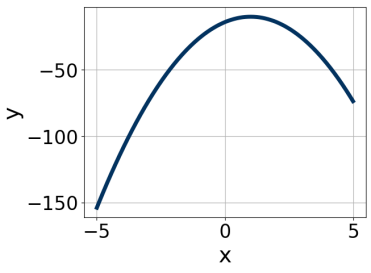
---

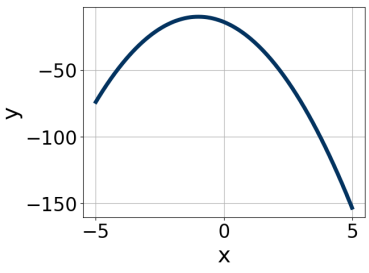
11. Graph the equation below.

$$f(x) = (x + 1)^2 - 10$$

A.


C.


B.


D.


E. None of the above.

12. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax+b)(cx+d); b \leq d$.

$$36x^2 + 60x + 25$$

A. $a \in [5.5, 6.7]$, $b \in [4, 10]$, $c \in [4.4, 7.1]$, and $d \in [5, 10]$

B. $a \in [-1.8, 1.6]$, $b \in [28, 34]$, $c \in [0.7, 2.5]$, and $d \in [28, 31]$

C. $a \in [10.3, 14.2]$, $b \in [4, 10]$, $c \in [1.1, 4.7]$, and $d \in [5, 10]$

D. $a \in [1.1, 4.1]$, $b \in [4, 10]$, $c \in [11.7, 12.4]$, and $d \in [5, 10]$

E. None of the above.

13. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax+b)(cx+d); b \leq d$.

$$24x^2 + 50x + 25$$

A. $a \in [-0.9, 2.5]$, $b \in [16, 22]$, $c \in [0.8, 1.14]$, and $d \in [30, 34]$

B. $a \in [5.3, 8.8]$, $b \in [5, 11]$, $c \in [3.86, 4.62]$, and $d \in [4, 9]$

C. $a \in [9.4, 14.1]$, $b \in [5, 11]$, $c \in [1.84, 2.09]$, and $d \in [4, 9]$

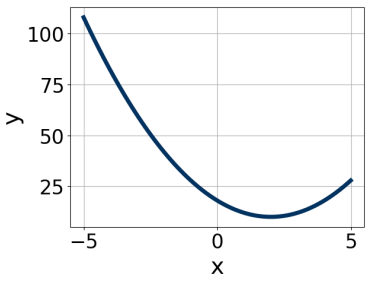
D. $a \in [2.9, 3.4]$, $b \in [5, 11]$, $c \in [4.77, 8.57]$, and $d \in [4, 9]$

E. None of the above.

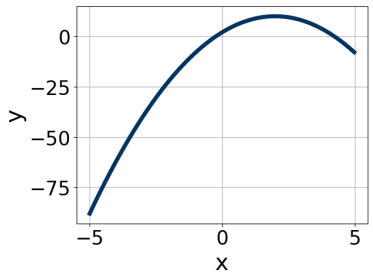
14. Graph the equation below.

$$f(x) = -(x-2)^2 + 10$$

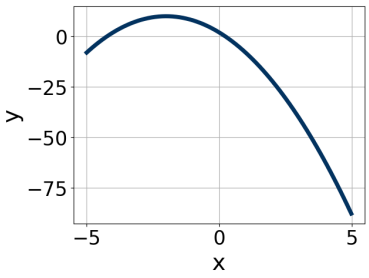
A.



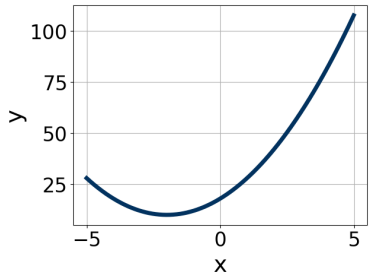
B.



D.



C.



E. None of the above.

---

15. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$-15x^2 + 14x + 4 = 0$$

A. $x_1 \in [-18.23, -17.35]$ and $x_2 \in [2.3, 5.3]$

B. $x_1 \in [-20.79, -19.67]$ and $x_2 \in [20.9, 21.4]$

C. $x_1 \in [-0.95, -0.13]$ and $x_2 \in [0.9, 1.9]$

D. $x_1 \in [-1.63, -0.76]$ and $x_2 \in [-0.8, 1]$

E. There are no Real solutions.

---

16. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$20x^2 - 12x - 4 = 0$$

A. $x_1 \in [-2.8, -0.6]$ and $x_2 \in [-0.14, 0.51]$

B. $x_1 \in [-6.1, -3.5]$ and $x_2 \in [16.46, 17.17]$

C. $x_1 \in [-22.6, -21]$ and $x_2 \in [21, 22.99]$

D. $x_1 \in [-0.8, 0.1]$ and $x_2 \in [0.73, 0.88]$

E. There are no Real solutions.

---

17. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$10x^2 - 53x + 36 = 0$$

A. $x_1 \in [0.32, 0.5]$ and $x_2 \in [8.64, 9.16]$

B. $x_1 \in [7.96, 8.19]$ and $x_2 \in [44.81, 45.46]$

C. $x_1 \in [0.71, 0.83]$ and $x_2 \in [4.25, 5.03]$

D. $x_1 \in [0.81, 0.92]$ and $x_2 \in [3.77, 4.23]$

E. $x_1 \in [1.5, 1.82]$ and $x_2 \in [1.57, 3]$

---

18. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$15x^2 + 38x + 24 = 0$$

A. $x_1 \in [-2.19, 0.62]$ and $x_2 \in [-1.26, -1.2]$

B. $x_1 \in [-3.17, -1.5]$ and $x_2 \in [-0.82, -0.45]$

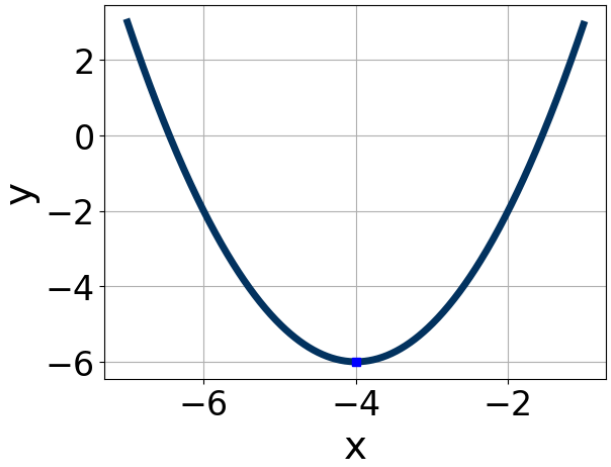
C. $x_1 \in [-5.27, -3.33]$ and $x_2 \in [-0.41, -0.32]$

D. $x_1 \in [-6.8, -5.15]$ and $x_2 \in [-0.33, -0.24]$

E. $x_1 \in [-20.47, -19.44]$ and $x_2 \in [-18.02, -17.91]$

---

19. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that a, b, and c belong to.



A. $a \in [1, 2]$, $b \in [6, 13]$, and $c \in [8, 11]$

B. $a \in [-3, 0]$, $b \in [6, 13]$, and $c \in [-25, -19]$

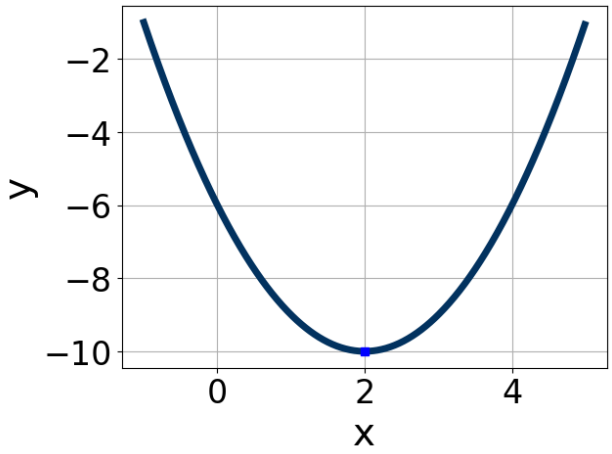
C. $a \in [-3, 0]$, $b \in [-10, -6]$, and $c \in [-25, -19]$

D. $a \in [1, 2]$, $b \in [-10, -6]$, and $c \in [22, 26]$

E. $a \in [1, 2]$, $b \in [-10, -6]$, and $c \in [8, 11]$

---

20. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that a, b, and c belong to.



A. $a \in [-0.9, 1.7]$, $b \in [-4, 0]$, and $c \in [-9, -4]$

B. $a \in [-1.7, 0.1]$, $b \in [-4, 0]$, and $c \in [-14, -12]$

C. $a \in [-1.7, 0.1]$, $b \in [3, 6]$, and $c \in [-14, -12]$

D. $a \in [-0.9, 1.7]$, $b \in [3, 6]$, and $c \in [-9, -4]$

E. $a \in [-0.9, 1.7]$, $b \in [3, 6]$, and $c \in [13, 15]$

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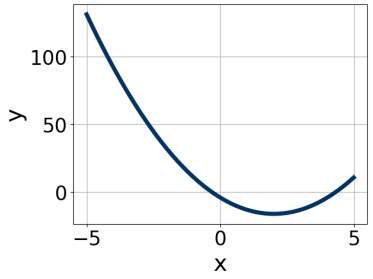
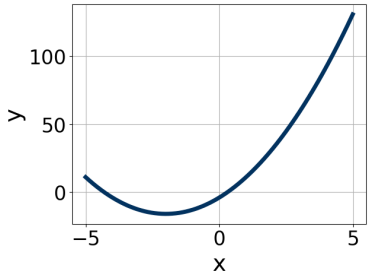
21. Graph the equation below.

$$f(x) = -(x+2)^2 - 16$$

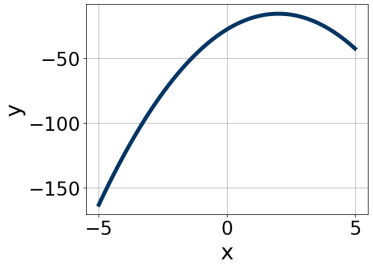
A.



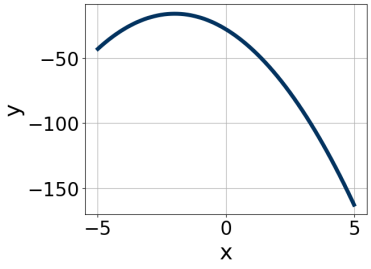
C.



B.



D.



E. None of the above.

---

22. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax + b)(cx + d); b \leq d$.

$$36x^2 + 61x + 20$$

A. $a \in [7, 14]$, $b \in [4, 5]$, $c \in [3.26, 4.33]$, and $d \in [3, 9]$

B. $a \in [-3, 2]$, $b \in [15, 19]$, $c \in [-0.27, 1.45]$, and $d \in [41, 52]$

C. $a \in [3, 8]$, $b \in [4, 5]$, $c \in [7.89, 8.53]$, and $d \in [3, 9]$

D. $a \in [27, 29]$, $b \in [4, 5]$, $c \in [-0.27, 1.45]$, and $d \in [3, 9]$

E. None of the above.

23. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax + b)(cx + d); b \leq d$.

$$24x^2 - 10x - 25$$

A. $a \in [7.89, 8.65]$, $b \in [-8, -4]$, $c \in [1.8, 4.8]$, and $d \in [1, 6]$

B. $a \in [-1.13, 1.53]$, $b \in [-30, -28]$, $c \in [0.5, 1.7]$, and $d \in [19, 23]$

C. $a \in [2.93, 4.07]$, $b \in [-8, -4]$, $c \in [4.8, 8.9]$, and $d \in [1, 6]$

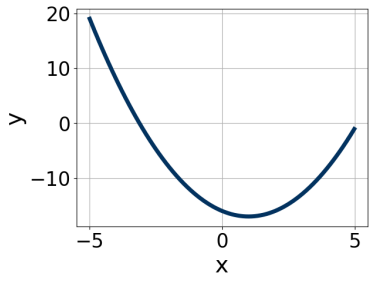
D. $a \in [1.83, 3.68]$, $b \in [-8, -4]$, $c \in [11.5, 14.6]$, and $d \in [1, 6]$

E. None of the above.

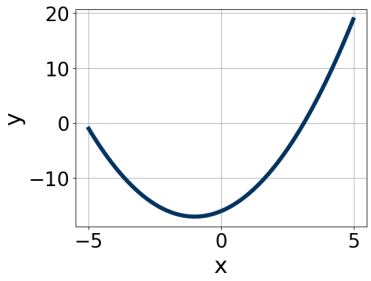
24. Graph the equation below.

$$f(x) = (x + 1)^2 - 17$$

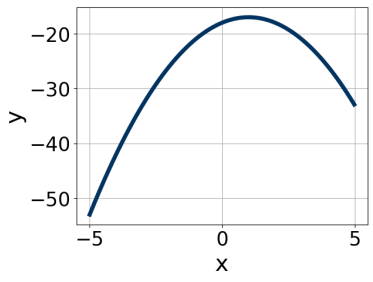
A.



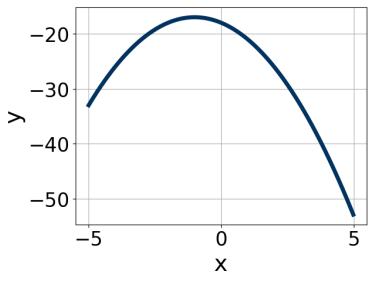
C.



B.



D.



E. None of the above.

25. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$14x^2 - 11x - 8 = 0$$

A. $x_1 \in [-7.7, -6.2]$ and $x_2 \in [16.4, 19.3]$

B. $x_1 \in [-1.5, -1.1]$ and $x_2 \in [-1.2, 1.1]$

C. $x_1 \in [-0.9, -0.3]$ and $x_2 \in [0.8, 2.2]$

D. $x_1 \in [-24, -22.8]$ and $x_2 \in [24, 24.8]$

E. There are no Real solutions.

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26. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$16x^2 - 11x - 4 = 0$$

A. $x_1 \in [-20, -17.4]$ and $x_2 \in [18.69, 19.94]$

B. $x_1 \in [-4.9, -3.6]$ and $x_2 \in [14.49, 15.55]$

C. $x_1 \in [-2.4, -0.6]$ and $x_2 \in [0.04, 0.59]$

D. $x_1 \in [-0.8, 2.1]$ and $x_2 \in [0.65, 1.04]$

E. There are no Real solutions.

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27. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$25x^2 - 60x + 36 = 0$$

A. $x_1 \in [0.29, 0.54]$ and $x_2 \in [3.38, 4.56]$

B. $x_1 \in [1.08, 1.81]$ and $x_2 \in [0.27, 1.73]$

C. $x_1 \in [0.51, 0.78]$ and $x_2 \in [1.98, 3.55]$

D. $x_1 \in [0.21, 0.38]$ and $x_2 \in [5.11, 7.21]$

E. $x_1 \in [29.71, 30.02]$ and $x_2 \in [29.92, 30.47]$

28. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$25x^2 - 65x + 36 = 0$$

A. $x_1 \in [0.51, 0.61]$ and $x_2 \in [1.82, 3.36]$

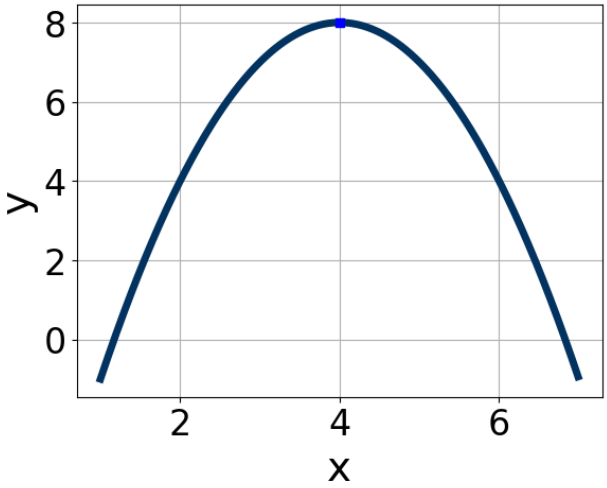
B. $x_1 \in [0.78, 0.86]$ and $x_2 \in [1.62, 2.15]$

C. $x_1 \in [0.39, 0.46]$ and $x_2 \in [2.81, 3.66]$

D. $x_1 \in [19.95, 20.11]$ and $x_2 \in [44.95, 45.23]$

E. $x_1 \in [0.33, 0.37]$ and $x_2 \in [3.73, 4.59]$

29. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that a, b, and c belong to.



A. $a \in [-2, 0]$, $b \in [-12, -7]$, and $c \in [-26, -22]$

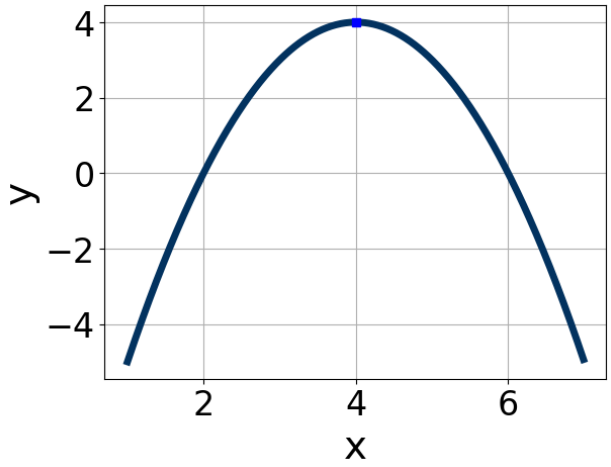
B. $a \in [0, 4]$, $b \in [-12, -7]$, and $c \in [24, 25]$

C. $a \in [-2, 0]$, $b \in [7, 9]$, and $c \in [-9, -6]$

D. $a \in [0, 4]$, $b \in [7, 9]$, and $c \in [24, 25]$

E. $a \in [-2, 0]$, $b \in [-12, -7]$, and $c \in [-9, -6]$

30. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that a, b, and c belong to.



A. $a \in [-1.6, -0.7]$, $b \in [5, 11]$, and $c \in [-15, -11]$

B. $a \in [-1.6, -0.7]$, $b \in [-8, -7]$, and $c \in [-15, -11]$

C. $a \in [0.3, 2]$, $b \in [5, 11]$, and $c \in [18, 21]$

D. $a \in [-1.6, -0.7]$, $b \in [-8, -7]$, and $c \in [-22, -19]$

E. $a \in [0.3, 2]$, $b \in [-8, -7]$, and $c \in [18, 21]$